**JAVASCRIPT ASSIGNMENT**

**1. write a java script function to calculate the sum of two numbers**

function sumNumbers(num1, num2) {

return num1 + num2;

}

// Example usage:

let number1 = 5;

let number2 = 3;

let result = sumNumbers(number1, number2);

console.log(`The sum of ${number1} and ${number2} is: ${result}`); 2. **Write a java script function multiplication table**

function multiplicationTable(num, limit) {

for (let i = 1; i <= limit; i++) {

let result = num \* i;

console.log(`${num} × ${i} = ${result}`);

}

}

// Example usage:

multiplicationTable(5, 10);

**3. write a java script program to find the maximum number in an array**

function findMax(arr) {

if (arr.length === 0) {

return null; // Return null for empty arrays

}

let max = arr[0]; // Assume the first element is the maximum

for (let i = 1; i < arr.length; i++) {

if (arr[i] > max) {

max = arr[i]; // Update max if current element is greater

}

}

return max;

}

// Example usage:

let numbers = [3, 7, 2, 8, 1, 5, 9];

let maximum = findMax(numbers);

console.log(`The maximum number in the array [${numbers}] is: ${maximum}`);

**4. Write a java script function to check if a given string is a palindrome**

function isPalindrome(str) {

// Remove non-alphanumeric characters and convert to lowercase

let cleanStr = str.replace(/[\W\_]/g, '').toLowerCase();

// Check palindrome

for (let i = 0; i < Math.floor(cleanStr.length / 2); i++) {

if (cleanStr[i] !== cleanStr[cleanStr.length - 1 - i]) {

return false;

}

}

return true;

}

// Example usage:

let str1 = "A man, a plan, a canal, Panama";

let str2 = "racecar";

let str3 = "hello";

console.log(`"${str1}" is a palindrome: ${isPalindrome(str1)}`);

console.log(`"${str2}" is a palindrome: ${isPalindrome(str2)}`);

console.log(`"${str3}" is a palindrome: ${isPalindrome(str3)}`);

**5. write a java script program to reverse a given string**

function reverseString(str) {

// Split the string into an array of characters, reverse the array, and join it back into a string

return str.split('').reverse().join('');

}

// Example usage:

let originalString = "Hello, world!";

let reversedString = reverseString(originalString);

console.log(`Original string: ${originalString}`);

console.log(`Reversed string: ${reversedString}`);

Output:

Original string: Hello, world!

Reversed string: !dlrow ,olleH

**6. write a java script function that takes an array of numbers and returns a new array with only the even numbers**

function getEvenNumbers(arr) {

let evenNumbers = arr.filter(num => num % 2 === 0);

return evenNumbers;

}

// Example usage:

let numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];

let evenNumbers = getEvenNumbers(numbers);

console.log(`Original array: [${numbers}]`);

console.log(`Even numbers: [${evenNumbers}]`);

**7. write a java script program to calculate the factorial of a given number Iterative approach**

function factorialIterative(n) {

if (n === 0 || n === 1) {

return 1; // Factorial of 0 and 1 is 1

}

let result = 1;

for (let i = 2; i <= n; i++) {

result \*= i;

}

return result;

}

// Example usage:

let number = 5;

let factorial = factorialIterative(number);

console.log(`The factorial of ${number} is: ${factorial}`);

**Recursive approach**

function factorialRecursive(n) {

if (n === 0 || n === 1) {

return 1; // Base case: factorial of 0 and 1 is 1

}

return n \* factorialRecursive(n - 1);

}

// Example usage:

let number = 5;

let factorial = factorialRecursive(number);

console.log(`The factorial of ${number} is: ${factorial}`);

**8. write a java script program to check if a given number is prime.**

function isPrime(number) {

// Check if number is less than 2

if (number < 2) {

return false;

}

// Check for numbers 2 and 3 separately

if (number === 2 || number === 3) {

return true;

}

// Check if number is divisible by 2 or 3

if (number % 2 === 0 || number % 3 === 0) {

return false;

}

// Check for divisibility starting from 5 up to square root of number for (let i = 5; i <= Math.sqrt(number); i += 6) {

if (number % i === 0 || number % (i + 2) === 0) {

return false;

}

}

return true;

}

// Example usage:

let num1 = 17;

let num2 = 20;

console.log(`${num1} is prime: ${isPrime(num1)}`);

console.log(`${num2} is prime: ${isPrime(num2)}`);

**9. write a javascript function that returns the fibonacci sequence up to a given number of terms.**

function fibonacciSequence(numTerms) {

// Initialize array to store Fibonacci sequence

let sequence = [];

// Handle edge case for 0 terms

if (numTerms === 0) {

return sequence;

}

// First two terms of Fibonacci sequence

sequence.push(1); // First term

if (numTerms === 1) {

return sequence;

}

sequence.push(1); // Second term

// Generate subsequent terms

for (let i = 2; i < numTerms; i++) {

let nextFib = sequence[i - 1] + sequence[i - 2];

sequence.push(nextFib);

}

return sequence;

}

// Example usage:

let numTerms = 10;

let fibonacci = fibonacciSequence(numTerms);

console.log(`Fibonacci sequence up to ${numTerms} terms:`, fibonacci);

**10. Write a java script function to convert “AAA BBB is CCC DDD” to “BBB AAA is DDD CCC”**

function convertString(str) {

// Split the string into words

let words = str.split(' ');

// Rearrange the words according to the desired format

let rearranged = `${words[1]} ${words[0]} is ${words[4]} ${words[3]}`;

return rearranged;

}

// Example usage:

let originalString = "AAA BBB is CCC DDD";

let convertedString = convertString(originalString);

console.log(`Original string: ${originalString}`);

console.log(`Converted string: ${convertedString}`);

**11. write a java script program to print below**

**#$$$$**

**##$$$**

**###$$**

**####$**

function printPattern(rows) {

for (let i = 1; i <= rows; i++) {

let line = '';

// Print '#' characters

for (let j = 1; j <= i; j++) {

line += '#';

}

// Print '$' characters

for (let k = i; k < rows; k++) {

line += '$';

}

console.log(line);

}

}

// Example usage:

printPattern(4);

**12. . Write a java script program to print below**

**1**

**1 2 3**

**1 2 3 4 5**

**1 2 3 4 5 6 7**

**1 2 3 4 5 6 7 8 9**

function printPattern(rows) {

let line = '';

for (let i = 1; i <= rows; i++) {

// Reset line for each row

line = '';

// Print leading spaces

for (let j = 1; j <= rows - i; j++) {

line += ' ';

}

// Print numbers for the current row

for (let k = 1; k <= i; k++) {

line += k + ' ';

}

// Remove extra space from the end of the line line = line.trimRight();

// Print the current line

console.log(line);

}

}

// Example usage:

printPattern(5);